Low Threat Closure Policy

Comments By

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Low Threat Closure Policy

- Draft Policy is Science Based
- Don't Change Groundwater Criteria (Add TBA)
- Policy Focused on Source Removal
- Soil Vapor Biodegradation Overstated
- Use TPH Fractions for Soil and Soil Vapor

Drinking Water Almost Never Threatened From UST Spills

- 1991 - “Where’s the Benzene”
- 1995 – Chevron Plume Study
- 1995 - LLNL “Plume-a-Thon”
- 1997 - Texas Plume Study
- 2008 – Vermont MTBE Plume Study
- 2009 - GSI BTEX and MTBE Plume Study

Groundwater Not Threatened

- Plumes Rarely Expand
- Confined to Unused Shallow Zone
- Very Rare Complete Human or Environmental Exposure Pathways
- Groundwater Remediation is Infeasible and/or Cost Prohibitive
- In Situ Biodegradation Ubiquitous

Groundwater Not Threatened

- Shallow Zones Frequently Polluted with Leaking Sewers, Urban Runoff, Animal Waste, Agricultural Fertilizers
- Shallow Zones Frequently Lack Yield for Reliable Drinking Water Wells
- Well Construction Standards Generally Protective of Shallow Zone Pollution

Source Removal is Best Groundwater Remediation

- Leaking UST and Piping Removed
- Free Product Removed
- Secondary Source Removed
- Cutting off the Head Kills the Plume

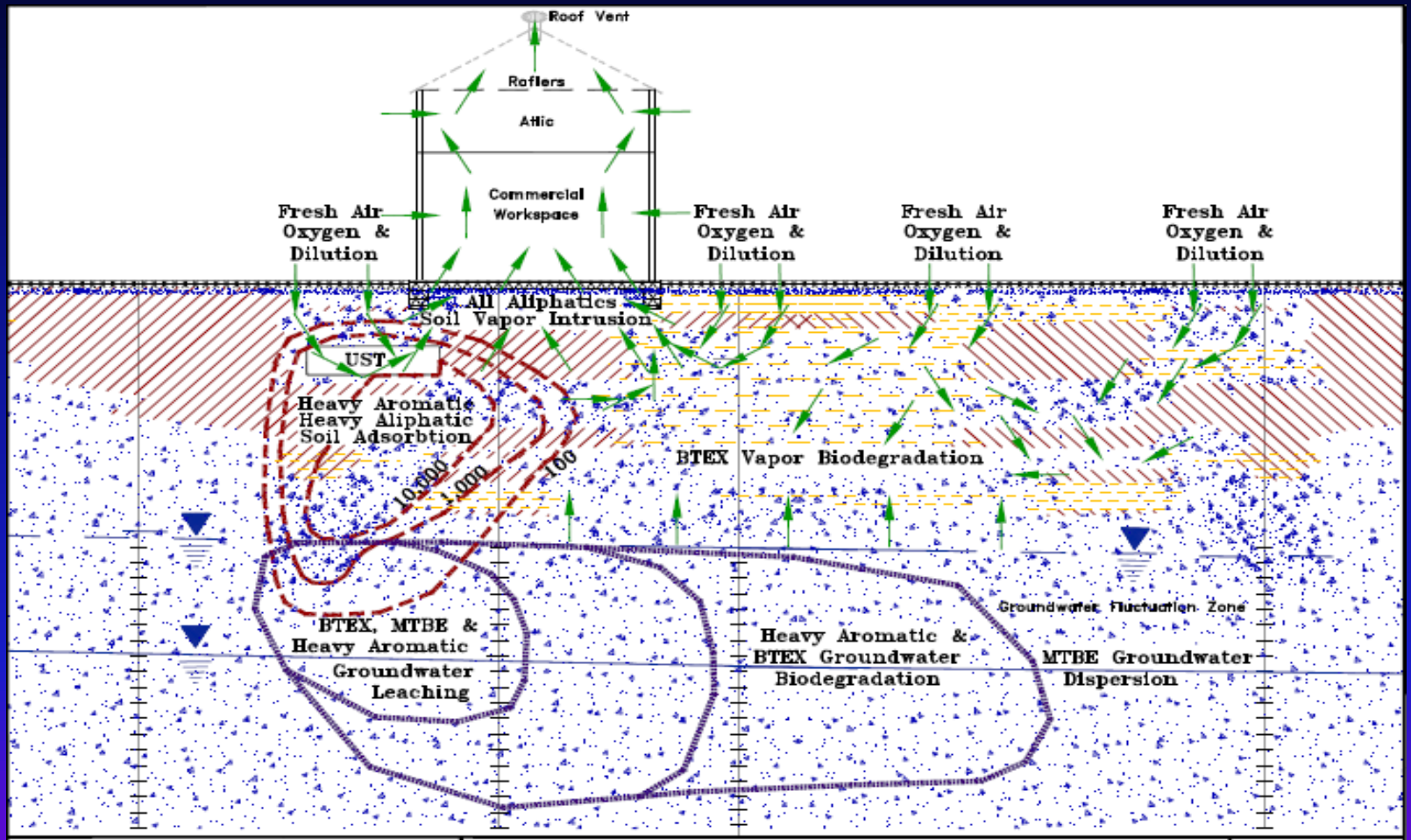
Soil Vapor Biodegradation Overstated

- Most Soil Vapor Sampling Methods Biased Low
- Groundwater Sampling Biased High
- Biodegradation Limited by Solubility in Water
- Heavy Aromatics and BTEX Most Biodegradable and Least Volatile
- Light and Heavy Aliphatics Most Volatile and Least Biodegradable

TPH Primary Chemical of Concern in Soil and Soil Vapor

- Benzene, Naphthalene, Ethyl Benzene and PAH Combined <5% of TPHg
- Light Aliphatic TPHg Dominates Soil Vapor
- Heavy Aromatic (Methyl-Ethyl DEATH) TPHg Dominate Soil
- BTEX, MTBE and TBA Dominates Groundwater

Soil Vapor Intrusion = 90% Light & 10% Heavy Aliphatics
Soil Adsorption = Heavy Aromatic (50%) and Heavy Aliphatic (20%)
Groundwater Leaching from Soil = All Aromatics and MTBE



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TPH-GASOLINE SITE CONCEPTUAL MODEL

PROJECT: swrcb-pres

FIGURE: 1

Draft TPH Screening Levels

- Soil Vapor
  - ✓ Res = 140,000-ug/m^3 Light Aliphatics (~160,000-ug/m^3 TPHg)
  - ✓ Com = 400,000-ug/m^3 Light Aliphatics (~440,000-ug/m^3 TPHg)
- Soil to Soil Vapor
  - ✓ Res = 22-mg/Kg Light Aliphatics (~150-mg/Kg TPHg)
  - ✓ Com = 52-mg/Kg Light Aliphatics (~350-mg/Kg TPHg)

Draft TPH Screening Levels

- Soil Contact
  - ✓ Res = 44-mg/Kg Heavy Aromatics (~75-mg/Kg TPHg)
  - ✓ Com = 310-mg/Kg Heavy Aromatics (~530-mg/Kg TPHg)
  - ✓ Util = 80-mg/Kg Heavy Aromatics (~130-mg/Kg TPHg)
- Soil Free Product Limit
  - ✓ 800-mg/Kg TPHg

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- Thank You
- Questions ?
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